

KEMELIMPAHAN KOMUNITAS FITOPLANKTON TAMBAK TRADISIONAL DI EKOSISTEM HUTAN BAKAU SEGARA ANAKAN, JAWA TENGAH

Intisari

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Penelitian ini bertujuan untuk mempelajari kemelimpahan komunitas fitoplankton di tambak tradisional pasang-surut, Tambak Alas Joyo (TAJo) dan kali Motean sebagai inflow. Tambak berukuran 205x 206,5 m. Lokasi penelitian dipilah 5, perairan caren-utara, perairan caren-selatan, perairan plataran-utara, perairan plataran-selatan, dan kali *inflow*. Caren merupakan kanal dengan jeluk $80 \pm 5,8$ cm dan lebar 3 m, sebaliknya plataran adalah pulau dalam tambak. Plataran dikoloni *Achantus ilicifolius* dan *Derris heterophylla* hampir 100%. Pada setiap titik sampling, sampel fitoplankton dicuplik 20 liter, air komposit, menggunakan modifikasi *Van Dorn* 5 liter, dengan 6 ulangan di perairan caren-utara dan selatan, 3 ulangan di plataran-utara dan selatan. Kali inflow dengan ulangan 5 kali. Sampel fitoplankton disaring dengan *Winconsin plankton-net* 120 mesh. Parameter yang diukur, suhu udara dan air, pH air, jeluk Secchi, DO, salinitas, kecepatan arus, dan nutrisi, NO_3^- , NH_4^+ , PO_4^{3-} , dan SO_4^{2-} . Hasil menunjukkan komunitas fitoplankton disusun 54 spesies, 6 fungsional-grup: diatom sentrik 2-5 spesies (3-130 ind per 100 liter, 0-7 %), diatom pennate 11-16 spesies (917-2975 ind per 100 liter, 44-69 %), algae unisel 5-8 spesies (278-410 ind per 100 liter, 6-17 %), algae koloni 4-8 spesies (145-350 ind per 100 liter, 4-11 %), algae filamen 5-10 spesies (220-2575 ind per 100 liter, 14-40 %) dinoflagellata 1-4 spesies (17-165 ind per 100 liter, 1-4%), yang terdistribusi tidak merata di setiap lokasi. Ukuran tambak luas, dasar tambak tidak rata, dan aliran air tidak sempurna di dalam tambak menyebabkan pengelompokan 3 komunitas fitoplankton. Dominasi diatom pennate yang diikuti tingginya dominasi alga filamen menyebabkan produktivitas tambak rendah.

Kata kunci: Algae filamen, diatom pennate, hutan bakau, nutrisi

THE ABUNDANCE OF PHYTOPLANKTON COMMUNITY IN TRADITIONAL POND MANGROVE ECOSYSTEM OF SEGARA ANAKAN, CENTRAL JAVA

Abstract

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The purpose of this research was to study phytoplankton community in a tidal traditional pond of Alas Joyo (TAJo) and Motean river as inflow. The pond size was 205x206,5 m. The locations were divided in 5 sites, northern-caren, southern-caren, northern-plataran, southern-plataran, and inflow river. Caren was a canal which had $80 \pm 5,8$ cm depth and width 3 m. In contrast, plataran was an island of pond. Plataran was colonized almost 100% *Acanthus ilicifolius* and *Derris - heterophylla*. At each sites, phytoplankton sampled of 20 liter, composite water, with 5 l Van Dorn modification, with 6 replicated in northern and southern-caren, 3 replicated in northern and southern-plataran. Kali inflow with 5 replicated. The parameter measured were air and water temperature, water pH, Secchi depth, DO, salinity, current, and nutrient, NO_3^- , NH_4^+ , PO_4^{3-} , and SO_4^{2-} . The result showed that the phytoplankton community composed of 54 species, 6 functional-group: centric diatom 2-5 species (3-130 ind per 100 liter, 0-7 %), pennate diatom 11-16 species (917-2975 ind per 100 liter, 44-69 %), unicellular algae 5-8 species (278-410 ind per 100 liter, 6-17 %), colonial algae 4-8 species (145-350 ind per 100 liter, 4-11 %), filamentous algae 5-10 species (220-2575 ind per 100 liter, 14-40 %) dinoflagellate 1-4 species (17-165 ind per 100 liter, 1-4%), that varied between sites. The extensive pond size, uneven pond bottom, and the water did not flux well within the pond caused 3 grouped of phytoplankton communities. The dominance of pennate diatom followed the dominance of filamentous algae caused low productivity of pond.

Key words: Filamentous algae, pennate diatom, mangrove, nutrient